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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/519,638

08/05/2005

Dimitris K Agraftotis

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EXAMINER

ZHOU, SHUBO

ART UNIT

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1631

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 10/519,638	<b>Applicant(s)</b> AGRAFIOTIS ET AL.	
	<b>Examiner</b> Shubo (Joe) Zhou	<b>Art Unit</b> 1631	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 4/26/07.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 3, 5, 7 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6, 8 and 10-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)<br>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)<br>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/22/05</u> . | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____<br>5) <input type="checkbox"/> Notice of Informal Patent Application<br>6) <input type="checkbox"/> Other: _____. |
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**DETAILED ACTION*****Election/Amendments***

Applicants' election, with traverse, of species A (The set of constraints includes a set of distance constraints, as in claim 2), species C (The set of atoms includes at least one real atom, as in claim 6) and species E (The subset of atoms is chosen at random, as in claim 8) in the response filed 4/26/07 is acknowledged. The traversal is on the ground(s) that the Office has not provide evidence that examining all the species together would entail an undue search burden. This is not found persuasive because as set forth in the previous Office action, these species are distinct because they involve distinct elements and parameters. For example, for Species A and B, distance constraints and volume constraints are distinct parameters and require different mathematical equations to analyze. Searching of both species would involve different search fields and thus would not be coextensive. Searching different fields is the reason that there would be undue search burden if they were examined together.

The requirement is still deemed proper and is therefore made FINAL.

Accordingly, claims 1-12 are currently pending, claims 1-2, 4, 6, 8, and 10-12 are under examination; and claims 3, 5, 7 and 9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/26/07.

***Sequence Rules Compliance***

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). Such

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sequence is present on page 10 of the specification ("sequence YGGFM"). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 because a paper copy, a computer readable form of a Sequence Listing containing this sequence, and a statement under 37 CFR 1.821(f) are not provided. Applicants are given the same response time regarding this failure to comply as that set forth to respond to this office action including providing a paper copy, a computer readable form of a Sequence Listing containing this sequence, and a statement under 37 CFR 1.821(f). Applicants are reminded that it is required that SEQ ID Nos be amended into the specification at each sequence, and that when a sequence is presented in a drawing regardless of the format or the manner of presentation of that sequence in the drawing, the sequence must still be included in the Sequence Listing and the sequence identifier ("SEQ ID NO:X") must be used, either in the drawing or in the Brief Description of the Drawings. Failure to comply with these requirements may result in ABANDONMENT of the application under 37 CFR 1.821(g).

#### ***Information Disclosure Statement***

The Information Disclosure Statement filed 4/22/05 has been entered and considered. Initialed copies of the form PTO-1449 are enclosed with this action.

#### ***Specification***

The specification is objected to because of the following including informalities:

The title of the invention is not descriptive. The elected invention is drawn to a method for generating atomic coordinates from a set of interatomic distance and/or volume constraints whereas the current title is generically directed to "conformational sampling by self-

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organization.” A new title is required that is clearly indicative of the invention to which the elected claims are directed.

Trademarks are used in this application, such as GLEEVEC<sup>TM</sup> on page 10. All trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort should be made to prevent their use in any manner that might adversely affect their validity as trademarks.

Appropriate correction is required.

***Claim Rejections-35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-2, 4, 6, 8, and 10-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are drawn to a method for generating atomic coordinates comprising the steps of: (1) placing a set of atoms on a coordinate map; (2) selecting a subset of atoms from the set of atoms, wherein the subset of atoms includes at least one associated constraint between the atoms in the subset; (3) revising at least one coordinate of at least one atom from the selected subset of atoms on the coordinate map based on the at least one associated constraint when the at least one associated constraint is violated; (4) repeating steps (2) and (3) for additional subsets of atoms from the set of atoms; and (5) generating coordinates for the set of atoms.

The following analysis of facts of this particular patent application follows the rationale suggested in the "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (OG Notices: 22 November 2005, available from the US PTO website at <http://www.uspto.gov/web/offices/com/sol/og/2005/week47/og200547.htm>).

The Guidelines states:

*To satisfy section 101 requirements, the claim must be for a practical application of the § 101 judicial exception, which can be identified in various ways (Guidelines, p. 19):*

- The claimed invention "transforms" an article or physical object to a different state or thing.*
- The claimed invention otherwise produces a useful, concrete and tangible result.*

In the instant case, at least one embodiment of the claimed invention merely manipulates data and performs a series of mathematical calculations without transforming an article or physical object to a different state or thing outside a computation device.

Furthermore, the invention does not produce a useful, concrete and tangible result. Specifically it does not produce a tangible result. Since the process merely manipulates data performs a series of calculations, the entire process could be entirely in the confine of a computational device. It only converts a set of data to another set without using or making available for use the results of the manipulation to enable its functionality and usefulness to be realized. A proper outputting step to make the final result of the manipulation available to be used by others might overcome the rejection.

### ***Claim Rejections-35 USC § 112***

The following is a quotation of the **second** paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 4, and 10-12 are rejected under 35 U.S.C. 112 , second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase “the set of constraints” recited in claim 2 lacks clear antecedent because there is prior reference to a set of constraints and thus it is not clear what is referred to by “the set of constraints.”

Claim 4 is rejected as being dependent from claim 2 and containing the same indefinite limitation.

The metes and bounds of the limitation “at least one associated constraint” recited in claim 10 are unclear. It is unclear whether this is the same “at least one associated constraint” as that recited in claim 1, from which claim 10 depends, or can be another at least one associated constraint. If it is the former, it is suggested that the word “the” be used in front of the phrase “at least one associated constraint” in claim 10.

Claim 11 is rejected as being dependent from claim 10 and containing the same indefinite limitation.

The phrase “the selected set of atoms” recited in claim 12, line 4, lacks clear antecedent basis because there is no prior reference to a selected set of atoms albeit there was reference to a selected subset of atoms.

Clarification of the metes and bounds of the claims is requested.

### *Conclusion*

No claim is allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shubo (Joe) Zhou, whose telephone number is 571-272-0724. The examiner can normally be reached Monday-Friday from 8 A.M. to 4 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, Ph.D., can be reached on 571-272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

/Shubo (Joe) Zhou/

SHUBO (JOE) ZHOU, PH.D.

PRIMARY EXAMINER